

## ABSTRACT OF THE DISCLOSURE

Network analysis in a network management system for a data network is improved by mapping the communication paths established in the network. Queries are sent by the network management system to each network element  
5 in the network. Queries are triggered by events within the network, for example, after notification by a network element that a communication path is being set up. Each query sent by the network management system requests certain connection and topology information from the network elements. Using this information, the network management system constructs the overall  
10 network topology and performs a path analysis to map completely each communication path through the network. When the communication path mapping is complete, various types of analyses are performed using the communication path information. These analyses include but are not limited to network capacity analysis, network performance analysis, and network fault  
15 analysis. Through the use of a network analysis engine module communicating with the network elements, the present network management system can interpret multiple networking protocols and different routing protocols.